



Chapter 2

Project-Based Learning

Learning Process

Project-based learning enhances the learning process. Students and teachers work through a series of ideas that help the students make decisions about their own learning. The learner needs to be aided in understanding self as the curriculum/lesson relates to 1) applying self as a learner to the situation, 2) framing questions, 3) tackling a project, 4) working as part of a team, 5) monitoring individual programs, 6) selecting a career, and 7) developing his/her skills and knowledge in order to be successful in a career choice.

Teachers should encourage each student to document his or her growth through a series of reflections at the conclusion of each stage of the project experience. Depending upon his or her approach to learning, a student may want to keep a video diary, a computer-assisted log, an audio library, a pictorial portfolio, or a record of artifacts.

As students begin an activity, they may engage in the following steps:

- form learning or work teams (cooperative groups);
- develop a mission for each team;
- develop a contract for the group;
- list the tasks to be completed;
- identify the leaders within the learning community;
- develop and implement team reporting procedures;
- coordinate the efforts of each team.



Implementing Project-Based Learning

As teachers implement project-based learning, they may engage in the following steps:



Define your goal: What do you want to achieve?

1 Keep in mind that the project will be student-centered and hands-on and will focus on active learning and the retention of knowledge. Determine which learning standards will be taught.

Build Support: Who can help achieve the goal?

2 Where appropriate, obtain the support of the administrative staff, other teachers, parents, business and industry, and the community.

Research: Is this a real-life problem?

3 Engage in interviews, reading and discussions. Be prepared to record observations at employment sites, follow established code and laws, as well as establish health and safety requirements, and address transportation and travel needs as appropriate for the project.



Determine whether students will work independently or in a group.

4 How many students will be included in the group? How will groups be selected and assessed?

Make a plan: What should be done next?

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- List objectives that address the skills that all students need to develop.
 - Create timelines including total project duration and the amount of time to be devoted to the project each week.
 - Organize the project.
 - Which learning standards are addressed?
 - Where do students start?
 - What information or experiences do students need before beginning the project?
 - What materials will be needed?
 - How will students obtain the materials?
 - Is the project timeline realistic given the students' other assignments?
 - What will students learn from this project? What is different about this project compared with other projects?
 - What knowledge and which skills cross disciplines?
 - What will happen if the project isn't successful?
 - How will students be assessed? What checkpoints are needed? How will the final project be evaluated? By what group of people will the project be evaluated?
 - Determine if the project appears to be of interest and if it is engaging and skill rich. Adjust if necessary.
 - Delegate responsibilities and assume a mentoring role.
 - Foresee problems and develop solutions.
 - Troubleshoot the project.
 - Create samples to determine if realistic.
 - Accept delays and use them to determine what can be done differently.
 - Make modifications.

The Benefits of Project-Based Learning

1. Project-based learning allows teachers and students to focus on in-depth central issues.
 - Content is presented authentically
 - Students deal with content in a relevant and interesting way
2. Students learn to search for answers and solve problems
 - Activities are challenging and constructive
 - Activities adapt to individual learners
3. Students are empowered
 - Project-based learning conditions encourage social, personal and collaborative skills
 - Project-based learning encourages use of technological tools

The Teacher's Role

During the project-based learning process, the teacher begins by playing the role of mentor. The teacher explains the project and then steps back and relinquishes control, acting as an observer. In this role, the teacher needs to feel comfortable with some degree of “creative chaos.” The teacher provides the time and the materials needed for conducting the project. In addition, the teacher helps students prepare for participation in the project. Students must learn to identify problems, think through the problem-solving process, meet expectations for social behavior, dress appropriately for the activity; use time appropriately, and show respect for others.

Throughout the project, the teacher provides opportunities for students to reflect on what they have done. Students may keep a journal, perform a group self-evaluation, or answer a set of questions.

Evaluating Project-Based Learning

Assessment instruments might include, but are not limited to the following:

- open-ended rubrics
- observation surveys
- peer rating scales
- self-evaluations
- teacher evaluation checklists and rubrics

High-quality project-based learning results in attainment of goals and objectives in the following areas:

- academic content
- cross-content workplace readiness skills
- occupationally specific skills
- skills for life-long learning

The project-based learning process also requires the following: demonstration of teamwork among participants, reflection on activities, and the design and implementation of portfolio materials.



Table 2.1

TRADITIONAL AND PROJECT-BASED INSTRUCTION COMPARISON

Criteria	Traditional Instruction	Project Based
Content	<ul style="list-style-type: none"> • Knowledge of facts 	<ul style="list-style-type: none"> • Comprehension of concepts and principles
Scope and Sequence	<ul style="list-style-type: none"> • Follows fixed curriculum • Move from unit to unit • Narrow, content area focus 	<ul style="list-style-type: none"> • Follows student interests • Large units composed of complex problems or issues • Broad, interdisciplinary focus
Teacher's Role	<ul style="list-style-type: none"> • Lecturer and director of instruction • Expert 	<ul style="list-style-type: none"> • Resource provider • Advisory/mentor
Assessment	<ul style="list-style-type: none"> • Products • Test scores • Reproduction of information 	<ul style="list-style-type: none"> • Process and product • Tangible accomplishments • Demonstration of understanding
Classroom materials	<ul style="list-style-type: none"> • Texts, lectures and presentations • Teacher/book company - developed worksheets and activities 	<ul style="list-style-type: none"> • Direct or original sources, printed materials, interviews, and documents • Data and materials developed by students
Use of technology	<ul style="list-style-type: none"> • Ancillary, peripheral • Administered by teachers 	<ul style="list-style-type: none"> • Central, integral • Directed by students
Type of student involvement	<ul style="list-style-type: none"> • Students working alone • Students competing with one another • Students receiving information 	<ul style="list-style-type: none"> • Students working in groups • Students collaborating • Students constructing, contributing, and synthesizing information
Student role	<ul style="list-style-type: none"> • Carry out instructions • Memorize and repeat facts • Listen, behave, speak only when spoken to 	<ul style="list-style-type: none"> • Carry out self-directed experiences • Discover, integrate, and present ideas • Communicate, show affect, produce, take responsibility
Goals	<ul style="list-style-type: none"> • Knowledge of facts, terms, and content • Mastery of isolated skills • Breadth of knowledge • Graduates who have knowledge to perform on standardized achievement tests 	<ul style="list-style-type: none"> • Understanding and application of complex ideas and processes • Mastery of integrated skills • Depth of knowledge • Graduates who have the disposition and skills to engage in sustained, autonomous, lifelong learning

Professional Development

To ensure that students will achieve mastery of the Cross-Content Workplace Readiness Standards and indicators, district staff need to integrate these standards into their curricula. Professional development activities focused on incorporating the standards into the curriculum and instruction are key ingredients in that process. The definitions, descriptions, explanations, vignettes and sample activities provided in this document will facilitate district staff development and conversations regarding infusion and integration of Cross-Content Workplace Readiness Standards. The following procedures may be helpful in encouraging staff to work cooperatively and to participate in professional development activities.

- Engage district staff in professional dialogue concerning the integration of the workplace readiness standards into their curriculum activities.
- Review sample activities and vignettes to understand the depth and scope of specific indicators and ways to integrate specific cross-content workplace readiness skills into classroom lessons and units of instruction.
- Identify lessons, projects, and activities included in existing curricula that are modeled after the sample vignettes and activities.
- Group staff by grade level, grade cluster and/or subject area. Use staff development time to meet, design, and revise interdisciplinary projects, units and/or lessons on an ongoing basis.
- Enlist the help of any teacher-trainers in the district to provide assistance and support to their colleagues in the implementation of the district-designed curriculum projects, units, and lessons which integrate cross-content workplace readiness skills.
- Incorporate these projects and units into written district curriculum as examples of cross-content workplace readiness integration.